AMENDMENTS TO THE CLAIMS

1. (Original) A pharmaceutical composition for use in ameliorating an effect of radiotherapy on skin, mucous membranes, or hair follicles comprising:

a solvent; and

an effective prophylactic or therapeutic amount of a nitroxide radioprotector in solution in the solvent, wherein the pharmaceutical composition is in the form of a low-residue gel.

2. (Original) The pharmaceutical composition of Claim 1, wherein the nitroxide radioprotector is 4-hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl.

3. (Original) The pharmaceutical composition of Claim 1, wherein the solvent is selected from the group consisting of water, urea, alcohols, and glycols.

4. (Original) The pharmaceutical composition of Claim 3, wherein the solvent is an alcohol selected from the group consisting of methanol, ethanol, propanol, and butanol.

5. (Original) The pharmaceutical composition of Claim 3, wherein the glycol is selected from the group consisting of ethylene glycol and propylene glycol.

6. (Original) The pharmaceutical composition of Claim 1, wherein the effect of radiotherapy is selected from the group consisting of skin conditions, mucous membrane conditions, hair follicle conditions, cytotoxicity, and polynucleic acid damage.

7. (Original) The pharmaceutical composition of Claim 6, wherein the skin condition is selected from erythema, folliculitis, fibrosis, dry desquamation, moist desquamation, hyperpigmentation, and dermatitis.

8. (Original) The pharmaceutical composition of Claim 6, wherein the mucous membrane condition is selected from oral mucositis and proctitis.

9. (Original) The pharmaceutical composition of Claim 6, wherein the hair follicle condition is alopecia.

10. (Original) The pharmaceutical composition of Claim 1, wherein the effective prophylactic or therapeutic amount of a nitroxide radioprotector is an amount from about 0.01 to about 100 mg/ml of the total composition.

11. (Previously presented)The pharmaceutical composition of Claim 1, further comprising a polymer selected from the group consisting of ethylene polymers, acrylic polymers, polyvinylpyrrolidones (PVPs), polyvinyl copolymers, cellulose polymers, natural polymers, polystyrene polymers, silicone polymers, and inorganic polymers.

12. (Original) The pharmaceutical composition of Claim 1, having a viscosity such that the nitroxide radioprotector will remain in contact with a treated area for a sufficient period of time to allow absorption of a pharmacologically effective amount into said treated area.

13. (Previously presented)A pharmaceutical composition for use in ameliorating an effect of radiotherapy to skin or mucous membranes, comprising:

a solvent; and

an effective prophylactic or therapeutic amount of a nitroxide radioprotector in solution in the solvent, wherein the pharmaceutical composition is in the form of a low-residue gel or low-residue thickened liquid that does not leave an amount of residue sufficient to enhance burning to the skin or mucous membranes when radiotherapy is applied.

14. (Original) The pharmaceutical composition of Claim 13, wherein the nitroxide radioprotector is 4-hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl.

15. (Original) A pharmaceutical composition for use in preventing or treating alopecia comprising:

a solvent; and

an effective prophylactic or therapeutic amount of 4-hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl in solution in the solvent, wherein the pharmaceutical composition is in the form of a low-residue gel.

16. (Previously presented)A method of treating a patient, comprising topically applying a sufficient amount of a nitroxide radioprotector to prevent or treat harmful side effects caused by radiotherapy, wherein the nitroxide radioprotector is in solution in a solvent, and the solution is in the form of a low-residue gel or a low-residue thickened liquid.

17. (Original) The method of Claim 16 wherein the nitroxide radioprotector is 4-hydroxy-2,2,6,6-tetramethylpiperidine-1-oxyl.

18. (Canceled)

19. (Original) The method of Claim 16, wherein the solvent is selected from the group consisting of water, urea, alcohols, and glycols.

20. (Original) The method of Claim 16 where the harmful side effect is selected from the group consisting of skin conditions, mucous membrane conditions, hair follicle conditions, cytotoxicity and polynucleic acid damage.

21. (Original) The method of Claim 20 wherein, the skin condition is selected from erythema, folliculitis, fibrosis, dry desquamation, moist desquamation, hyperpigmentation, and dermatitis.

22. (Original) The method of Claim 20 wherein, the mucous membrane condition is selected from oral mucositis and proctitis.

23. (Original) The method of Claim 20, wherein the hair follicle condition is alopecia.

24. (Currently amended) A method of treating a patient, comprising:

topically applying a sufficient amount of a nitroxide radioprotector to prevent or treat a harmful side effect caused by radiotherapy, wherein the nitroxide radioprotector is in solution in solvent;

evaporating sufficient solvent to substantially reduce topical burning on application of radiotherapy; and

applying radiotherapy to said patient.

25. (Previously presented) A method of treating a patient, comprising:

topically applying a sufficient amount of a nitroxide radioprotector to prevent or treat a harmful side effect caused by radiotherapy, wherein the nitroxide radioprotector is in solution in solvent, has a sufficient viscosity such that it is retained in place on the patient, and the solution is in the form of a low-residue gel or a low-residue thickened liquid; and

applying radiotherapy to said patient.